

SPECIAL SECTION: SIMONDON AND DISABILITY STUDIES



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I am delighted to present this group of essays for the Disability History Association Newsletter. As I will argue below, Simondon offers exciting new possibilities for research into disability history and disability studies more broadly. “Simondon and Disability Studies” provides a theoretical overview of Simondon’s main arguments as they relate to the field of disability studies. The two essays that follow – “Using Simondon to Understand Disability & Aging in the Renaissance” by Sarah Parker (Jacksonville University) and “Machinic Milieus: Simondon, John Hart & Mechanology” by Mark Hayward (York University) and Ghislain Thibault (Wilfrid Laurier University) – present specific case studies in historical and cultural research into different areas of disability. Collectively, these essays provide an introduction to Simondon and demonstrate the applicability of Simondon’s philosophy to a number of areas directly related to the study of disability.

When Gilbert Simondon published [*On the Mode of Existence of Technical Objects*](#) in 1958, his radical and disorienting philosophy of ontogenesis met with instant acclaim in France. After this initial interest, however, Simondon has been all but ignored on both sides of the Atlantic, and it was not until his death in 1989 that the rest of his initial work was published. Since then, Simondon has garnered increasing attention, and many of Simondon’s core works are now being translated and edited for the first time. This signals a substantial shift in today’s theoretical and scholarly climate, which has been reshaped by the work of theorists such as Gilles Deleuze, Bernard Stiegler, Isabelle Stengers, Peter Sloterdijk, and Mark Hansen, among others, accompanied by a correspondent emergence of new areas of study in recent years that have successfully taken up these theoretical developments, including: posthumanism, New Media, micropolitics, and disability studies, to name a few. Generally, these areas of study are marked by an openness to new theoretical approaches that have proven disorienting to the poststructuralist approaches dominating the scene for the past thirty years. Despite his relative unfamiliarity, Simondon is a central figure in all of these changes because his theories inform the thinking behind emergent fields such as disability studies. In this brief introduction to Simondon’s philosophy, I will bring him back into the conversation

on central issues within disability studies by introducing some of his key terms and demonstrating their direct applicability to the social, political, and ethical investigation of disability.

Born in the 1990s with the passage of the Americans with Disabilities Act and the early publications of Lennard Davis, disability studies maintains an uncomfortable relationship with the traditional forms of identity politics that oversaw its growth into an independent field of study. As Davis argues in [*Enforcing Normalcy*](#) (1995), disability is characterized by a shifting “threshold” rather than by putatively stable categories of identity. In addition to exploring the semiotic codes governing critical gender and race theories, disability has also tended to add deeply materialist concerns with prosthesis and genetic inheritance. These qualities generate a partial estrangement from more established interpretive models. As Davis contends, the disabled body is “a nightmare for the fashionable discourse of theory because that discourse has been limited by the very predilection of the dominant, ableist culture” (5). Like the other emergent fields I mentioned earlier, disability study’s discomfort with pre-existing theoretical assumptions has required that it become an exploratory field composed of a variety of approaches. Scholars and activists as diverse as Tobin Siebers, David Mitchell and Sharon Snyder, Tom Shakespeare, Carol Thomas, Sunaura Taylor and Rosemarie Garland-Thomson are characterized as much by their different approaches and concerns as they are linked by the tenuous interplay of social and physiological effects that Lennard Davis calls the “disabled moment.”

Despite the evident heterogeneity of approaches to disability studies, I would argue that we are all connected by a shared critique of normalcy and its implicit claims to self-coherent, universalizing categories. It is on this common ground that Simondon might be productively invited into the conversation. The historical work by Davis and others demonstrates that normativity is a central concept in modernity, underlying everything from the institutions investigated by Michel Foucault to the categories of the Other examined by post-colonial studies. Disability studies participates in these critiques of normate culture, but it also demands something further, because it requires a positive formulation of the differences that disrupt categories of normalcy. The disabled subject is not a “subaltern,” in Gayatri Spivak’s formulation, because socially and politically, disabilities speak through what Tobin Siebers identifies as the (un)intentionally exaggerated forms of “masquerading” that cannot help but defy the codes of normativity in an outspoken and expressive manner. Likewise, impairment and its social configuration as disabilities are not exclusively subjected to medicalized institutionalization; just as often, they are integrated into the social fabric and our bodily condition in ways that cannot be comfortably cordoned off from society through the techniques of bio-power. The “disabled,” in short, are among us. Disability studies thus raises a unique challenge by demanding a positive formulation of difference, and this demand in turn requires rethinking the theoretical approaches in which our inquiries are situated.

Moving beyond the poststructuralist insistence on lack, absence, and loss, the theoretical developments based in Simondon's work provide tools for thinking about difference as an integral part of both the biological and the socio-political dimensions of life. Perhaps the signal distinction between Simondon's work and the theories that have predominated for the past thirty years is his insistence on beginning the conversation at the pre-individual level. Whereas the overriding concern of dominant theories has been with the subject, Simondon demonstrates the continuous connections between the micro-elements that compose the subject all the way up to large-scale social movements. The emphasis on a different scale is extremely important, because it instantiates a continuous awareness of the changes below the surface of what are often mistakenly believed to be stable forms of identity or subjectivity. Disability studies is well-suited to this approach, since a "disability" is precisely the manifestation of the changeability of our state. With poststructuralism, from Foucault and Donna Haraway to Judith Butler and Slavoj Žižek, the subject position has been taken as the starting point of theory. While the work of these and other poststructuralists has been immensely important for disability studies (among many other fields), they all leave open the question of what comes before and after the subject. Simondon, on the other hand, develops a rich vocabulary for exploring the minute, particular processes of everyday life that form the basis for the individual, while also accounting for how the individual necessarily changes in response to internal and external conditions.

To those unfamiliar with Simondon's work, this may at first sound like a form of naturalism, but there is no cause-and-effect necessity in his thought. Every moment of "individuation" carries unpredictable possibilities of change as well as the effort of self-maintenance. Nor is this process of becoming an effect of external accident on permanent substance, as an Aristotelian worldview would have it. The onset of Huntington's disease may be genetically determined, but how it changes the individual and how the individual adapts and changes each day is not predictable, and it is in this opening between being and becoming that a concrete, lived politics – and even an ethics – becomes possible. To take another example, the disabled person who uses a prosthesis is decidedly *not* encompassed by the simple equation of human individual + tool/technology, but is rather reshaped by what Simondon would call "technicity." Rather than seeing technical objects as tools operated by an autonomous subject, Simondon argues for a mutually informing relationship that, in the case of the prosthesis, also involves wider contact with a network of researchers and manufacturers, communities and loved ones who are interconnected through an integrated matrix of human and non-human elements. This quality of change and adaptation helps to explain why there has been so much resistance to the image of the disabled person as passive victim from within the disabled community: individuality is not abandoned so much as changed (and sometimes radically) from within the experience of impairment. The trouble with previous poststructuralist approaches is that, because they rest at the level of the subject, they do not adequately account for the micrological intensities that make up the individual's evolving affective responses and physical adaptations to their changing technical and social milieu.

Simondon calls these small, everyday changes “transductions,” in order to indicate that they are two-way processes of adaptation and change. All individuals exist in a “metastable” condition, meaning that even their constancy signals a process open to change rather than a permanent quality. In Lennard Davis’s description of the “disabled moment,” he signals precisely this constant proximity to change, but we still need a vocabulary for describing the sometimes minute shifts that cross the threshold from ableist culture to the recognition of disabilities. Adapting an example from Davis, we might consider someone who is momentarily incapable of remembering something important. If asked, that person would *normally* claim environmental or circumstantial conditions (loud music, exhaustion, etc.), and yet these moments raise the question of the changing interaction between environment and individual, as well as the past’s relation to the future. This kind of forgetfulness might signal the beginning of Alzheimer’s or the latent effects of an otherwise masked cognitive disability as well as those “external factors” named earlier. In such an example, the individual’s future is signaled by the event of forgetting, but not determined by it. Simondon would call this moment of forgetting a “disparition,” a tensile difference between the individual’s world and its process of becoming. Disparition signals the constant relationship between individuation and its opposite, “disindividuation,” which is not the same as the breakdown or loss of subjectivity, but rather signals the connection back into other latent possibilities of becoming. It is worth emphasizing that neither individuation nor disindividuation are inherently good or evil: this must be decided by the individual’s evaluations from within the process of change. Disindividuation is just as central to the war veteran’s relearning to walk as it is in the example of forgetfulness that may signal Alzheimer’s. These constant imbalances, or disparitions, are the stuff of life for Simondon, pointing to the richness of possibility and the challenge of change that qualifies every moment of life.

One of the possibilities accounted for by disparition is pain. In Simondon’s work, he discusses anxiety as an irresolvable conflict between the individual and its process of individuation. Similarly, pain, especially the chronic pain that accompanies some impairment, can be understood as the clash between the psychic, physical, and environmental phases of individuation. [Tobin Siebers](#) has written movingly and insightfully about the role of pain in disability studies, arguing that it is both a reality that cannot be discounted, and an experience that cannot be adequately generalized. Because Simondon’s work refuses to segregate the body and psyche from its environment, it offers the possibility of developing a much fuller account of the experience of pain in its specificity. Just as disability is often a quality of thresholds, pain is an emergent phenomenon that depends on a variety of factors. Simondon names this variety of potential qualities the “apeiron” (derived from pre-Socratic terminology), by which he wants to signal the storehouse of variabilities that we carry around all time. Marking both the ground from which individuation emerges and to which disindividuation returns, the apeiron is ethically neutral, and yet it is often activated by events that are anything but neutral, such as pain. Think, for example, of the not infrequent relationship between pain and the adaptations and uses of prosthetics discussed earlier, or Sunaura Taylor’s argument that the often painful experience of

impairment can open the way to greater community and intimacy. The crucial point here is that, for Simondon, the changes wrought by pain have the potential to create new forms of individuation, which in turn have their own validity and modes of connecting with others. Simondon calls this process of openness to becoming other, and the potential for different social, political, and ethical community that results, “transindividuation.”

As I noted earlier, Simondon argues that the psychic individual is not the precondition for social formations. The transindividual indicates the points of connection that are both larger and smaller than the individual. These quantum, emergent points of shared experience and affect are what make the formation of social groups possible, and for Simondon, this is also where a politics and an ethics comes onto the horizon. In contradistinction to the imperatives of right action that found traditional ethical considerations, Simondon argues that our interactions are grounded in the networks that make individuation possible. This is a pragmatic ethics that, unlike the normative categories of ethical imperatives, focuses on the ways that communities form according to their specific abilities, needs and worldviews. Self-identifying members of the Deaf community, for example, constitute a group with a specific ethics and politics as well as a language and culture. That group’s relationship to the larger disabilities community, or normate culture, is complex rather than preconditioned, specific rather than universalizable, because it involves the realization of small, everyday, transindividual potentials both within and outside of the group.

The movement from the micrological conditions of individuation to the ethical and political formations of the transindividual demonstrates an integrated worldview that allows us to see past the problematic binaries of self and other, identity and change that, I would argue, do not fully describe disability studies. As [Carol Thomas](#) has noted, there is an abiding tension between what she calls the “social deviance” and the “social oppression” models, or the contrasting views that disability is determined from an individual or a social perspective. As I hope to have made clear in this all-too brief introduction to the main lines of Simondon’s thought, the process of individuation encompasses both the individual and the social in a continuum that reaches from the pre-individual to the largest socio-political formations. In its positive formulation of change and difference, Simondon’s philosophy offers scholars a vocabulary and mode of thought that productively addresses disability studies’ need for a theory after poststructuralism.

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Using Simondon to Understand Disability & Aging in the Renaissance

Sarah Parker

While disability studies has demonstrated its vitality in many areas of academic study over the past quarter of a century, it is still a relatively young and unexplored field in early modern studies. There are important exceptions to this claim. The journal [*Disabilities Quarterly*](#), for example, published an entire special issue on “Disabled Shakespeares” (29.4 2009) edited by Allison P. Hobgood and David Houston Wood, which consisted of a set of articles that laid the foundation for arguing that disability is a relevant category in Renaissance studies. During the early modern period, the term “disability” was not used the same way in which it came to be understood in the 20th century. As Hobgood and Wood point out, the concept of disability was not bound up with the various manifestations of biopower that stigmatize or empower impairment in the modern world. Instead, they argue that the Renaissance expressed a fascination with the idea of variation in human form. More recently, the study [*Recovering Disability in Early Modern England*](#) (Ohio State Press, 2013), assembled by the same editors, follows up on these arguments, illustrating that establishing disability as an investigative category for the early modern period will provide a helpful lens through which scholars can profitably revisit the Renaissance notion of subject-formation and the value of difference.

These are the major studies on disability in Renaissance literature to date, and they both focus on early modern England. Furthermore, although they look at a variety of manifestations of disability, from dwarfs in the Renaissance court, to blindness, to cognitive disability, they largely ignore the topic of aging. Aging is a central theme in disability studies, because the process of aging is palpable proof that the embodied subject changes and often experiences disability and impairments that are not necessarily congenital, but are nevertheless a central part of the daily lives of most aging persons. In the short space available here, I would like to focus on the potential value of using Simondon’s theories of individuation and disindividuation to understand the relationship between aging and disability in the [*Essais*](#) by French author Michel de Montaigne (1533-1592) in order to propose a new approach to disability studies in the early modern period.

In his book [*Disability Theory*](#) (University of Michigan Press, 2008), Tobin Siebers points out that only 15% of people with disabilities are born with impairments. In the Renaissance as today, many people became disabled in some way later in life either through traumatic accident or the natural process of aging. Michel de Montaigne’s autobiographical style in the [*Essais*](#) elegantly describes the relationship between his shifting sense of his individual self and his experience of aging with its attendant introduction of new impairments to his body. Montaigne began writing the [*Essais*](#) relatively late in his life as part of a process of retreat from his career in law and politics, a project that he began around the age of forty and that occupied him until his death at age of fifty-nine. In the course of the work’s composition, Montaigne remarks on aging and the loss of a robust bodily health he had so valued earlier in life. Thus, although his [*Essais*](#) address an array of topics, they are joined by the shared fact of his aging body, a common thread that makes itself explicit in many of the books’ key chapters. In the chapter “On the Resemblance of Children to Fathers” (2.37), for example, he discusses

in particular suffering from kidney stones, the ailment that had plagued and eventually killed his beloved father. In relating his experience of illness and disabling pain, Montaigne uses a language of shifting identity that Simondon's theories are well-equipped to describe: Montaigne narrates a series of additions and losses, both physical and intellectual, that reshape his understanding of himself as a subject without necessarily ascribing a purely negative or positive valence to these changes.

In the beginning of "On the Resemblance of Children to Fathers," Montaigne describes what he sees as the logic guiding his writing process. He refers to his book as a "bundle of so many disparate pieces" (696) rather than as a complete work or an artistic whole.¹ Similarly, he describes his writing process as one of expanding additions and changes that reflect his various moods and "mutations": "I do not correct my first imaginings by my second – well, yes, perhaps a word or so, but only to vary, not to delete. I want to represent the course of my humors, and I want people to see each part at its birth" (696). Montaigne understands his book as a representation of his person, an account of the course of his "humors." In the Renaissance, humors refer to a person's physical as well as psychological features. These were the four bodily fluids that had to be kept in balance in order to maintain physical and psychological health. Montaigne understood both his body and his mind (which he would have considered inextricably intertwined) to be in constant flux. The principle of changeability guiding his understanding of himself thus shapes the *Essais*, making it a composite formed through continual addition rather than a work aiming at formal closure.

Montaigne conflates his subject position and his aesthetic project, arguing that both are characterized by creative mutability through addition. He makes a point of including quotations from books he is reading, writing about the various quotidian events in his life that pique his interest, and in the process creating a work representing a self that constantly changes rather than arguing for a stable identity which would need to be manifested through a more rigid aesthetic standard. These small-scale changes and encounters that get taken up in the process of shaping a subject sound very much like what Simondon calls "individuation," the largely unpredictable process in which the individual adopts and adapts certain bits and pieces of the world around her and incorporates them into her sense of identity.

Though Montaigne sees his work as inextricably bound up with the complex emergence of his sense of individuality, this does not lead him to perceive these projects, the *Essais* or himself, in a totalizing way. Instead, his writing ingeniously describes a process, rather than the achievement of a coherent identity. At the beginning of "On the Resemblance of Children to Fathers," Montaigne achieves this by coupling a story of subtraction with a story of addition to show the subtle but surprising events that shape his shifting process of individuation. The first story is told in only two sentences and recounts how a young valet, who was taking dictation from Montaigne, made off with several pages of the *Essais* as they were in progress. Rather than expressing some sense of a loss of self or the absence of an essential part of an organic whole, he instead dismisses the entire incident in a single sentence: "It consoles me that he will gain no

more by it than I have lost” (697). The book Montaigne writes and his sense of self are both informed through the complexly variable incidents that shape the process of individuation. In the very next sentence, Montaigne describes an “acquisition” that at first seems counterposed to the “loss” of a portion of his book: the discovery that he has kidney stones. Though these stones cause Montaigne a great deal of physical pain, he does not describe this change as an alien, exterior phenomenon. This does not mean that Montaigne celebrates the stones; rather, he writes to acknowledge their role in changing his sense of self. For example, the immense pain that they cause incites him to rework his understanding of Stoic philosophy and consider at length whether it is possible to grimace in pain while maintaining a calm stoicism inside.

By paradoxically reversing the binary of loss and acquisition, such that the loss becomes no loss at all and the acquisitions come in the unlikeliest of places, Montaigne illustrates a logic of compilation that characterizes his writing in the [*Essais*](#). This logic extends into his understanding of the changes to his person that, in normative interpretations of bodily health and subjectivity, would be perceived as purely negative or detrimental. This sounds very much like Simondon’s notion of “disindividuation,” in which what we might perceive as loss in fact creates the conditions of possibility for the emergence of new forms of individuation. The seeming loss of health that Montaigne experiences is no loss at all, but rather an opening onto new experiences, such as rethinking philosophies of suffering or identifying with his father. Such a process describes an innovative way of looking at what we would now call disability, the shift in the normative models of physical or mental “wholeness.” Montaigne dismisses such images of bodily integrity and instead understands personal and aesthetic creation as an ever-changing process.

Montaigne was not the only Renaissance author to discuss aging, and the early modern understanding of aging and its effects on mind and body offer a fruitful avenue for further inquiry in the emerging field of early modern disability studies. The promise of this field is evidenced by the recent publications I mentioned above, as well as Ashgate’s announcement in early 2013 that it is launching a new series on [interdisciplinary disability studies](#) (series ed. Mark Sherry). Similarly, Leeds Trinity University College recently hosted a Northern Renaissance Seminar on disability in the Renaissance (proceedings of which have been reported in the [Journal of Literary and Cultural Disability Studies](#) (7.2 2013)). These are all signs that early modern disability studies is a growing field. Simondon’s theories, because they attempt to describe the shifting relationship of individual and environment, are well-equipped to help us consider the early modern understanding of self and personhood before the historical institution of strongly normative models of bodily and cognitive integrity. This connection between Renaissance epistemology and Simondonian philosophy will be especially relevant in considering the process of aging and its effects on the humoral body.

Machinic Milieus: Simondon, John Hart & Mechanology

Mark Hayward and Ghislain Thibault

Our project begins from the premise that the thought of Gilbert Simondon offers a unique perspective for work in disability studies. Over the past couple of years, we have been tracing the history and development of mechanology, or the science of machines, as it evolved through discussions and exchanges between philosophers, engineers and artists beginning in the late 19th century. This is a tradition of research that stems from the writings of Franz Reuleaux on *kinematics* in the 1890s, and includes the work of Jacques Lafitte on machines in the 1930s and Simondon's writing on technical objects in the 1950s.

The connection between disability studies and the work of Gilbert Simondon results from our interest in the career of John Hart, a Canadian computer scientist who actively promoted Simondon's work in the 1970s and fostered the dialogue on mechanology among scholars and writers in Canada and Europe. Hart founded the [Department of Computer Science at the University of Western Ontario](#) in 1964. Alongside his interest in the burgeoning world of computers and automata that occupied his research during the 1960s, Hart was also interested in the development of philosophical frameworks that might help computer scientists to better understand the contributions of their work to society. As a result of his interest in philosophy, Hart was involved in the first translation of Simondon's *[Du mode d'existence des objets techniques](#)* into English, a version that [remains unpublished](#) today. This fact is significant for our discussion of disability studies because Hart's interest in theories of machines was coupled with his research into the use of computers as a learning aid. In the late 1970s, for example, he helped create the [Computer Braille Facility](#) at Western and, later on, the [Audio Tactile Network](#), both projects to develop technology for the visually impaired.

By thinking through the relationship between John Hart's work and the writings of Gilbert Simondon, we intend historicize the reception of Simondon's work in the 1960s and 1970s in order to situate his perspective on the relationship between machines and bodies in relation to contemporary debates in disability studies. We interpret Simondon's ideas about "technical objects" in relation to a cluster of work on machines as organ-extension, suggesting that his approach offers a useful framework for thinking about technology that challenges presumptions about sensorial and corporeal normativity. To this end, we sketch out two ways in which Simondon's thought holds promise for contemporary research in disability studies. The first of these arises from Simondon's attempt to integrate conceptual and concrete analyses of technology, an approach that relies on a unique synthesis of phenomenology and ethnology. The second of these, building on Simondon's hybrid philosophical method, is an elaboration of the relationship between technology and humans that focuses on modes of embodied mediation. Finally, we briefly discuss how Simondon's notion of milieus was articulated through Hart's work on human-computer interaction.

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While the scope and systematic nature of Simondon's thought suggest a high level of abstraction, Simondon is first and foremost a philosopher of concrete particulars. This is true of his writings about machines and technics, but it is equally true of his later work on biology, psychology and technical invention. Simondon's philosophical method is a product of the disparate influences on his work, ranging from philosophy to cybernetics to the history of technology and science. In his discussions of technical objects, Simondon offers a methodological and conceptual focus on materiality and embodiment that draws on both the work of phenomenologists like Maurice Merleau-Ponty (with whom Simondon studied in the 1950s and to whom he dedicated his book on technical objects) and the ethnological study of the evolution of tools and machines adapted from the writings of André Leroi-Gourhan, among others.

Simondon's project integrates the structure and operation of technics into the material and social networks that constitute individual and collective being. This approach separates him from other well-known thinkers of technology, such as Martin Heidegger and Jacques Ellul. Rather than looking for the "essence" of technology (Heidegger) or the formal logical relation of technics (Ellul), Simondon repeatedly draws upon details from the historical development of technologies in order to show that it is in the concrete instantiation of specific technical objects that one finds the key to understanding the ontology of technics. Simondon's hybrid philosophical approach offers a materialist method for the study of technics and technologies that differs markedly from Marxism, yet remains equally grounded in a materialist framework, leading to an important point of intersection with contemporary disability studies: his approach to the relationship between the body and technology.

Simondon's discussion of the technical object (particularly his thorough critique of the opposition between technology and the human) places him in the long line of thinkers belonging to what Mark Hansen and Bernard Stiegler have called "epiphylogenesis," or the co-evolutionary theory that considers tools as extensions of bodily functions and organs. [In the first volume of *Technics and Time*](#), Bernard Stiegler's argues that Simondon provides an early elaboration of theories of the exteriorization of body and memory by technical means. The fundamental paradox of organ-extension, noted by many, is the enhancement/obsolescence duality: the tool enhances the faculties of the organ while making it obsolete at the same time.

The lexicon of the prosthetic – often called upon to describe this machinic and biological encounter – often assumes this tension in its implicit claim that the technical prosthesis eventually dis-ables the organ. As [Sarah Jain](#) has noted, the trope of the prosthesis oscillates between the assumption of a disable body necessitating supplementation and that of an able body amputated by the technical extension of the prosthesis.

Yet, it is worth noting that Simondon and others only sporadically draw on the prosthetic lexicon, which polarizes the discussion about disability and relies on a simple model of causality. The epiphylogenetic approach, and Simondon's work in particular, offers a way out of the paradoxes of the debate about prosthesis. Simondon argues that

the technical object mediates between the subject and the world, what Simondon calls the *milieu*. In the process, a new *milieu* is created. In other words, the outcome of the mediating function of the “[prosthetic](#)” technical object is not just the augmentation (followed by obsolescence) of the human body, but also includes the creation of an environment in which such relations take place. This “associated milieu” is “at the same time natural and technical.”

Simondon combines his analysis of the emergence of the “associated milieu” with a study of the internal coherence and structure of the mediating object as well. In this way, his approach to technical objects expands the focus to consider the human-tool-environment triad as immersive and intensive rather than instrumental. At the same time, he draws attention to the importance of [the mode of existence of technical objects](#) in determining the nature of these milieus. Rather than an immutable opposition that favors the organic over the inorganic, Simondon stages the encounter between technology and culture. Importantly, this encounter occurs through technical objects that serve as mediators, a “functional bridge” between the two ([L'invention dans les techniques](#) 85). This double approach – towards the milieu and the interiority of the technical object – centers Simondon’s philosophy squarely on the significance of the non-human, constituting a phenomenology of technology that is not exclusively oriented toward normative models of human experience or subjectivity.

By putting the milieu forward as the site within which bodies encounter technologies, one moves away from the idea of the individual as fixed either psychologically or physically. The human is not a pre-determined set of biological or cognitive capacities (a point Simondon will develop in significant detail in his later writing on individuation), but rather that which enters into relation with technical objects and the surrounding milieu. The theorist Muriel Combes writes that, based upon this approach to the human-technology-world relation, Simondon proposes “a humanism constructed on the ruins of anthropology and on the renunciation of the idea of a nature or a human essence” ([Gilbert Simondon and the Philosophy of the Transindividual](#) 49).

It is for this reason that one might pursue a fruitful dialogue between Simondon’s thought and recent work in disability studies that has sought to better understand the relationship between embodiment and various technologies, tools and supports. For example, one might see echoes of the contributions of Simondon in Papadimitrou’s description of the experience of adopting a wheelchair as the process of becoming “[enwheeled](#).” She writes that the use of such an apparatus points to “a way of being in the world that is not merely mechanical or practical (as skill acquisition is often assumed to be) but also existential and embodied” (“[Becoming en-wheeled](#)” 695). There is in Papadimitrou’s discussion of en-wheel-ment much that echoes the relationship between the technical object and human beings that Simondon describes in terms of the associated milieu, or the relations and potentiality that emerges from the interaction between the technical object, its user and its environment.

Hart's work was not theoretical in the traditional sense and he recognized that Simondon's work on technology emerged from similarly oriented engagement with material technologies and inventions. According to Hart and his collaborators, Simondon's work was essential to the revival of the science of machines they called "[mechanology](#)," following Jacques Laffite. (It is also worth noting here that Simondon was not fully aware of the mechanological tradition, but he recognized that there was similarity between his interest in technical objects and earlier attempts to develop a science of machines.) In this way, Hart's later work with visually impaired students should not be seen as a radical shift in the focus of his interest. Rather, it was an attempt to put into practice his understanding of the role that technology could play in human development, an attempt that was an exercise in the mixture of concrete material analysis and conceptual analysis that had led him initially to Simondon's work.

Hart worked on the development of the [Computer Braille Facility](#) in collaboration with blind students on the Ontario campus. Retiring from the university in the early 1980s after failed attempts to publish his translation of Simondon and other mechanologists, Hart dedicated himself to developing computer technology for use by blind students, founding [the Audio Tactile Network](#) in 1984 (which continues to exist today in [London Ontario](#) as [ATN Access](#)). Unfortunately, there are relatively few archival traces that explain Hart's transition from his work on mechanology to his later work on the computerization of braille and the development of other technological tools. Nonetheless, it is clear that Hart understood that new computing technologies, because they relied heavily on vision, had "severely affected" those with visual impairments. Echoing Simondon's notion of concretization, Hart worried that the visual bias of computing that emerged in the conceptual phase of computer interfaces formalized systemic barriers for the visually impaired. "What an irony," he wrote, "to think that that the desire to satisfy simultaneously the needs of the blind could produce a general progress of technology as a whole" ([Parole véhémence](#) 187).

In his work, Hart perceived visual disability as an agent of innovation for technological design rather than as a restrictive condition. The human-machine interaction he explored went beyond an ocular-centric interface, offering alternative ways of engaging with computers. Hart's pioneering work is part of a tradition of enabling human-computer interaction that has not relied on the augmentation/obsolescence paradox of prostheses, but instead has offered a way of addressing the co-adaption of subjects and machines through their interaction in a complex milieu. In positioning technology as an adaptable tool rather than inflexible object, we can begin to see how Hart was putting Gilbert Simondon's philosophy to work. The trajectory we have traced between the development of mechanology and Hart's later work on [ATN](#) helps situating Simondon's importance for understanding the relationship between disabilities and technology. John Hart's transition from his promotion of mechanology to his later work with [ATN](#) demonstrates Simondon's importance for understanding the relationship between disabilities and technology.